

E-PERMITTING SYSTEM CAPABILITY AND IMPLEMENTATION ISSUES REPORT

FEBRUARY 12, 2003

Prepared for the
Office of Solid Waste
U.S. Environmental Protection Agency

Prepared by
MNG Center, SRA International, Inc.

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1.0 Introduction

The U.S. Environmental Protection Agency's (EPA) RCRA Hazardous Waste Permitting Program is investigating the feasibility of electronic permitting. The purpose of this report is to document observations and findings from visits to three states that have designed and implemented e-permitting systems. Through this study, EPA sought to address the following questions: how are such electronic permitting systems organized (architecture); what are the capabilities and features of existing e-permitting systems; and what are the range of barriers and implementation issues that prevent greater use of such electronic permitting systems?

This report is organized into the following sections:

- 2.0 Background
- 3.0 Methodology
- 4.0 Observations and Findings
- 5.0 Description of State E-permitting Visits

Appendix A- Definitions for Criteria

Appendix B- Acronyms

Appendix C- Information Sources Used to Prepare This Document

2.0 Background

The RCRA program first began studying the feasibility of utilizing electronic permitting systems, possibly for units under the draft standardized permit rule, through its *Emerging Landscapes* survey (2001). Major findings for general e-permitting systems included:

- Comprehensive e-permitting systems--that allow electronic submission of a permit through the internet and can allow for tracking and sharing of appropriate data among the parties without the use of paper in the process—are quite rare;
- E-permitting systems, whether used for electronic submittal functionality or used primarily for tracking, were costly and required stakeholder buy-in in system design;
- Data sharing within state environmental programs and beyond to other states and EPA can be an important benefit from system use; and
- Secure transfer of electronic data from applicants to agencies is inhibiting the widespread use of e-permitting systems.

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Next, based on these findings, EPA convened State and NGO representatives to discuss feasibility of e-permitting for RCRA at EPA's RCRA National Meeting in January 2002. Given the feedback among panelists and participants regarding the positive benefits of existing air and water systems to a range of stakeholders, EPA moved forward with a more detailed examination of systems in order to apply lessons learned to RCRA.

EPA engaged the Marasco Newton Group (now the MNG Center, SRA International) to further examine the feasibility of creating e-permitting modules or functionality for use by the states. The specific tasks outlined by EPA are described further below in the methodology section.

3.0 Methodology

A brief summary of tasks completed to date include:

- Reviewing EPA policies and docket comments of relevant proposed rules (e.g., CROMERRR);
- Interviewing federal/state experts, including representatives of EPA's Office of Environmental Information (OEI), ASTSWMO, and ECOS;
- Conducting stakeholder meetings with states, industry, and public to obtain insights on EPA/state system features and functionality, needs, and barriers. The first was conducted with federal and state representatives in July 2002. The second was conducted with public interest and industry representatives in October 2002.
- Developing of interview guide with questions to facilitate data collection;
- Selecting states for visits;
- Conducting state visits to gather data - We visited the state environmental agencies of Mississippi, New York, and Texas in September and October 2002. Specifically, we visited the Mississippi Department of Environmental Quality (MDEQ), New York State Department of Environmental Conservation (NYSDEC), and Texas Council of Environmental Quality (TCEQ).
- Reporting findings and observations - This report summarizes the data obtained during the three state visits. Section 4 presents the key findings based on observations from the state visits. Section 5 contains detailed observations of each state and compares the state systems, partly by using a table (not contained in this version of the report). Both the findings and observations track the nine (9) criteria that were used to collect the state data. The report also analyzes factors impacting system design and implementation.

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4.0 Observations and Findings

Our observations and findings cover the established criteria, presented in the *Interview Guide for Information Gathering*, used in data collection for all three states.

- Relationship Between RCRA Program Implementation and Use of Electronic Permitting
- Overview of Electronic Permitting Systems
- Electronic Reporting
- User and Application Interface Programs
- File Format
- Transport Mechanism
- Legal and Security Mechanism
- Report Integrity
- Electronic Signature and Certification

In addition, Factors Impacting Design and Implementation, while not a stand-alone criteria, is discussed as they affect many of the issues raised in the criteria above.

Set forth below are observations and findings based on data collection efforts at MDEQ, NYSDEC, and TCEQ.

Key Findings

- *Comprehensive RCRA e-permitting systems are non-existent; however, initial planning has begun in all three states.*
- *State integrated management information systems for multi-media exist and continue to evolve.*
- *States do not have a direct link between their integrated management information systems and RCRAInfo.*
- *Only one state agency, TCEQ, has a system that is conducting electronic submittal for major media permits.*

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General Findings

Relationship Between RCRA Program Implementation and Use of Electronic Permitting

- *Comprehensive RCRA e-permitting systems are non-existent, however, initial planning has begun in all three states.* MDEQ is partnering with members of the TEMPO Users Group to explore RCRA enhancements to enSite. NYSDEC is developing an electronic permit condition library as an incremental step toward a RCRA e-permitting system. TCEQ is in the early phase of creating the RCRA logic for an e-permitting system, but is faced with staff, financial, and software constraints.

Overview of Electronic Permitting Systems

- *All systems use a “master file” containing general facility information and permit data.* All three state systems contain a centralized information hub, called a master file or central registry, which contain records for the facilities that do business with or are of some interest to the agency. This key feature enables the agencies to view the names of the legally responsible parties at a facility and their contact information; view facility information for all media permits; and generate a facility identification number.
- *Permit builder applications are similar and use data quality standards and permit libraries.* All functional systems reviewed have data standards built into drop-down menus that prevent extraneous or non-applicable information from being entered. For most systems, permit libraries are utilized by permit writers to choose preferred conditions based on data entered into the application screen.
- *Security is ensured by internal and external protections.* Internal security is ensured by NT operating systems. All states restrict permission to access the systems, including the ability to read, write, execute, and delete. Only the DBA has direct access to the databases. External security for the database is provided through multiple firewalls.
- *State web sites contain a useful array of information on the permitting process for the public and facilities.* All states visited contain useful policies and regulations on the permitting process and provide public notice information to the public. Texas enables the public and facilities to query its website for many types of permits. New York’s Title V program contains draft and final Title V permits that can be downloaded. All states are moving toward making more information available to the public. Texas is in the process of compiling a compliance rating system, which will be available to the public.

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- *State integrated management information systems for multi-media exist and continue to evolve.* All states are evolving toward a one-stop permitting process. Therefore, states favor incorporating a RCRA component to their existing management information systems as opposed to creating a stand-alone RCRA e-permitting system.

Electronic Reporting

- *TCEQ has an electronic reporting system that has the capability to accept multi-media data.* However, while the system is only receiving hazardous and industrial waste data, other media reporting will be phased in over time. STEERS assists customers in meeting certain reporting requirements, and aids the TCEQ in collecting and processing the data. STEERS enables customers to submit industrial and hazardous waste reports; allows the addition of new waste codes and new waste management units to the notice of registration; and enables a facility to change its facility information, and waste and management unit information.

User and Application Interface Programs

- *STEERS enables a customer to submit an application through an Internet connection using a web browser or download the software and load it on a PC.*

File Format

- *TCEQ's Title V IMS allows the applicant to submit data in any form such as WordPerfect, Word, ASCII, PDF, EXCEL, QuattroPro, or Paradox.*
- *STEERS uses an XML format to define how the data is organized when it is transmitted from the regulated community to TCEQ.*

Transport Mechanism

- *TCEQ's Title V IMS provides applicants options for completing and submitting applications, including email, paper, CDs or diskettes.*
- *STEERS offers two transport mechanisms to customers, including an Internet connection utilizing a browser or downloading the software and loading it onto a PC.*

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Legal and Security Mechanism/Electronic Signature and Certification

- *STEERS has legal and security mechanisms in place to ensure that TCEQ is collecting credible data and providing the means to maintain the enforceability of the regulatory program at the same level as a paper-based system. Legal and security mechanisms include: Participation Agreement and account/password creation; single user sign-on; and verification of Participation Agreement compliance with previous recent logons.*
- *STEERS is the only system that utilizes electronic signature for major media permits. MDEQ's enDx also accepts electronic signature for general permits.*

Report Integrity

- *TCEQ's Title V IMS has various mechanisms for maintaining report integrity.*

Factors Impacting Design and Implementation

- *Stakeholders were involved in system design, particularly for those systems interfacing with the public. For internal tracking and compliance systems there was typically no stakeholder input. For systems that allow electronic submittal and impact the permitting process for applicants, outside stakeholders were typically consulted through industry councils and public groups.*
- *States provide training to staff and outside users. MDEQ provides training to its employees in processing applications, using enSite, enSearch, and new software enhancements prior to it becoming operational. MDEQ participates in the AMS' TEMPO Users Group, and works with other member states to leverage knowledge and data regarding system enhancements and lessons learned. MDEQ has monthly meetings for users to discuss problems, enhancements, and training. In addition, MDEQ provides training and outreach to industry and public groups by attending manufacturers association, outreach sessions, and advisory councils. NYSDEC provides hands-on training to their staff across the state. For users of the TCEQ STEERS application, they have conducted extensive staff and industry training, developed a user's manual, help desk, and a list-serve to share questions and information.*
- *States have sophisticated information technology staff and also use consultants when needed. All states have to varying degrees utilized staff expertise and relied on consultants in developing their systems. Overall, most of the system design was created by consultants.*

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- *Top-level management support is a critical factor in system development.* All state agencies agreed that having top management support is an important factor in obtaining both resources and the staff buy-in required to move forward.
- *Resource limitations have a major impact on state's abilities to create systems.* While some parties have successfully obtained grants from EPA and other sources, overall, state budgets have been lean. These limitations have impacted the development of e-permitting initiatives in general, including enhancing and expanding systems to cover RCRA. Despite these challenges, states have shown the ability to be resourceful in moving forward, though the pace of development has suffered.
- *Only one state conducted systematic change management resulting in system development.* MDEQ committed approximately 10% of their staff to a re-engineering effort. Consequently, the agency reorganized the Office of Pollution Control around the key business processes. As a result, two new divisions were formed. During the process, MDEQ presented the agency's vision to industry and the public through outreach sessions.

[Insert Observation Tables]

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5.0 Description of State Visits

The SRA/Marasco Newton Team conducted three state visits to collect information and observe e-permitting systems. The state visits included:

- Mississippi Department of Environmental Quality from September 11-12;
- New York Department of Environmental Conservation from September 17-18;
- Texas Commission of Environmental Quality from October 16-17.

Organization of this section is based on each state visit. Within each state description, information is based on the nine criteria. Appendix A presents the definitions of the nine criteria.

5.1 Mississippi Department of Environmental Quality (MDEQ) E-Permitting Site Visit of September 11-12, 2002

5.1.1 Background

During the early 1990's, MDEQ faced many challenges. The challenges were centered on budget cuts which caused reductions in staff and services, and consequently in EPA having to temporarily take over part of the NPDES program. Around 1994, the budget picture improved and MDEQ was able to restore staff and services. In late 1996, MDEQ realized that difficult times could return, and decided to begin a re-engineering process to evaluate potential business process improvements.

The purpose of the re-engineering process was not to reduce staff, but simply to ensure that MDEQ was working on priorities in the most effective way. MDEQ was hoping that a result of the re-engineering process would be to increase productivity and ultimately free up resources for other important tasks and activities.

MDEQ committed approximately 10% of their staff to a re-engineering effort facilitated by a management consulting firm. The broad-based re-engineering effort concluded in July of 1997 with the decision to implement the recommendations of the re-engineering teams to reorganize the Office of Pollution Control more around the key business processes. As a result, two new divisions were formed, an Environmental Permits Division (EPD) and an Environmental Compliance and Enforcement Division (ECED). Key parts of the vision were a single point of contact when dealing with the agency, better public participation, reduced handoffs, uniformity of permitting and compliance processes, and the development of a enterprise-wide multi-media data management system with a move toward e-business processes. The reorganization included the phased movement of virtually all permitting programs into EPD and compliance and enforcement activities into ECED. The two new divisions were further subdivided based on industrial sectors with no reference to environmental media. Each industrial sector branch was provided the necessary programmatic expertise to deal with the environmental issues associated with the facilities in the sector. Originally, the plan was

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to implement the program over a number of iterations over a number of years. However, the first phase was so successful MDEQ decided to complete the implementation in the second phase.

It was determined early on that if the integrated permitting processes were going to be successful, then a true multi-media data management system was going to have to be designed. The system would include data management, electronic business functionality, electronic permitting, and electronic compliance and enforcement functionality. The agency applied for and became one of the original 13 “one-stop” grant states. The one-stop program was the initial gateway to the development of the comprehensive system.

Change management began in November 1996 with a commitment of 10% of staff at all levels and a contract with American Management Systems (AMS) to design and develop the “*electronic* Environmental Information Management System” (enSite). MDEQ staff participated in defining the multi-media permitting process and the needs for an integrated information management system that would include an e-permitting component. As the system design evolved, more staff was included in the change management process. During the change management process, there was continual communication from the managers to the staff. In addition, MDEQ communicated with public and industry groups by presenting their vision to manufacturers’ associations and through outreach sessions.

In 1998, EPD and ECED began a phased approach to implement their vision. The approach consisted of reconstructing the file system, developing standards for file organization and maintenance, data conversion, pilot scale implementation, and comprehensive training of staff. Prior to data conversion, existing staff performed a manual clean up of the data. This involved reviewing every file to eliminate duplicates, correct errors, and reorganize the data to conform to system requirements. Results of the phased implementation included:

- Reduced cycle time for issuing permits;
- Improved coordination among MDEQ staff and MDEQ and applicant;
- Higher quality permits;
- More efficient use of staff resources; and
- Standardization of the permitting process.

By March 2000, EPD completed its evolution to its present organization. No new staff and money was added to the organization. The organization consists of the following:

- A new division with an integration of all permit functions for multi-media;
- 10 branches organized by industrial sectors;
- Placing all of the staff expertise for permits within each branch;
- Assigning staff “major and minor” media-specific roles (e.g., an air specialist who also assists on RCRA permits) based on knowledge and skills; and

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- A permit manager who is the single point of contact for interacting with an applicant and is accountable.

The re-engineering of the permitting functions was successful for the following reasons:

- The permitting vision;
- Top management support;
- Business processes drove the data management decisions;
- Involvement of staff at all levels;
- Support from key industry stakeholders;
- Taking “small steps” rather than trying to accomplish everything;
- Identification of and addressing challenges such as policy issues and data clean-up and conversion; and
- Planning for maintenance, user support, and training.

In March 2002, MDEQ’s utilization of enSite included:

- 15,637 agency interests;
- 601 permits;
- 93,971 permitting and compliance tasks
- 11,048 documents; and
- 5,806 compliance evaluations.

5.1.2 Relationship Between RCRA Program Implementation and Use of Electronic Permitting

MDEQ has adopted the federal program for RCRA; however, they are not authorized under HSWA. MDEQ is not planning to adopt EPA’s Standardized Permit Rule when it is final.

Because EPD has evolved to a “one-stop permitting” process, the following activities apply to multi-media permits:

- Pre-Application Meeting - EPD has a pre-application meeting with the facility to discuss site selection and evaluation and to establish application requirements and performance pact (optional). The performance pact is “a non-enforceable, non-binding informational document that is prepared by the EPD permit manager outlining the responsibilities of the applicant and EPD permit manager in the permitting process in order to bring the application to a decision point efficiently.”

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- **Expanded Public Participation** - The applicant must hold at least one public meeting prior to submitting the application; submit a meeting summary and list of attendees and written comments; and provide public notice 30 days prior to the hearing (hazardous waste permits only).
- **Receive Application** - Receipt of an application officially starts the permitting process. Activities include:
 - Issuing the applicant a letter acknowledging receipt of application;
 - Notification of the public via newspaper public notice and EPD's website of all applications received by EPD on a monthly basis;
 - Reviewing the application for completeness and accuracy;
 - Resolving all application deficiencies; and
 - Issuing the applicant a notice of completeness letter.
- **Draft Permit Preparation** - The permit writer conducts a site inspection before drafting the permit. The draft permit is prepared based on the application and applicable regulations. When the draft permit is complete, it is sent to the facility for comments.
- **Public Notice Comment Period** - EPD requests that the public review and comment on the draft permit through the public notice. EPD publishes a public notice as required by the regulations, which may include publication in local and statewide newspapers, and on EPD's website. All public comments received during the public notice period are evaluated.
- **Permit Decision** - EPD prepares the final permit based on all relevant information obtained during the permitting process. The Division Chief of EPD signs the permit and the final permit is transmitted to the facility. EPD places a listing of all permit actions on the Permit Board Agenda for a 30-day permit appeal period.
- **Modifications and Renewals** - Permits modifications and renewals are processed as new applications, which include public participation and incorporation on any regulatory changes that occurred subsequent to the issuance of the original permit.

MDEQ provides online information to industry and the public via the EPD website. The online information includes guidance, forms, public notices, and permit status.

enSite includes some features for RCRA. (Refer to Section 5.1.3.2 for a description of enSite.) Currently, MDEQ is working with the TEMPO Users' Group to develop RCRA features for enSite. TEMPO is AMS' proprietary name for enSite.

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5.1.3 Overview of MDEQ's Integrated Environmental Information Management/E-Permitting System

5.1.3.1 System Architecture

enSite

Implemented in October 2000, enSite is a fully integrated information management system that provides a single interface between Mississippi's regulated industries and MDEQ. It uses an Oracle database with PowerBuilder screens, and operates off a UNIX server. The system is highly reference table based, making it very flexible. MDEQ utilizes a consultant and internal resources to make system enhancements. Data standards and naming conventions have been developed for enSite.

The security for enSite utilizes three firewalls, user ID and password, and policies and procedures. One firewall protects the web server, a second firewall protects the application servers, and a third firewall protects the database server. Only the database administrator (DBA) has direct access to the Oracle database. A copy of the database is available for daily work activities. Every evening, the DBA backs up the copy of the database.

The DBA issues an ID and password to a user. The DBA sets permissions with input from supervisors to control access to files and directories. Permissions include read, write, execute, and delete. Other security features include a check-in and check-out process for folders or files. The check-in and check-out process allows a user the ability to view information, but a user cannot change or edit the information.

enSearch

enSearch is an intranet-based query tool for generating ad-hoc and standard reports from enSite data. There is also a public version of enSearch (enSearch Online) accessible via the MDEQ website. enSearch uses Visual Basic and Crystal Reports and operates off a Microsoft Windows 2000 IIS server.

RADIUS

RADIUS is TEMPO's electronic submittal software. It is a stand alone application that uses PowerBuilder and SQL database and runs on most Windows platforms. Currently, MDEQ is not using RADIUS to accept permit applications or other reports from industry. (Refer to Sections 5.1.4 and 5.1.5 for additional descriptions of RADIUS.)

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Cost Information.

Exhibit 5-1 presents a summary of the cost for developing, operating, and maintaining the various components of the system.

Exhibit 5-1
Summary of Cost Information for enSite, enDx, enSearch, enSearch Online

<i>enSite</i>	<i>Cost Estimates</i>	<i>Notes</i>
Conceptual Design	\$117,336	
Core + Air	\$876,000	Includes \$75K extended warranty
Water and Waste Conceptual Design	\$45,000	
Water and Waste Plug-ins and Pilot	\$232,000	
PRL Training	\$11,286	
Core + Air Enhancements	\$380,408	
enDx/enSite interface	\$100,000	
Maintenance Agreement for enSite Support	\$75,000	
enSite/IDEF interface	\$200,000	
Fee plug-in license	\$62,500	
Third Party Contactor Support	\$150,000	Estimated
Water and Waste enhancements	\$573,160	
enSite Total Cost to Date	\$2,822,690	
enDx		
Funded by State ePortal	\$350,000	Estimated
Support for ePortal	\$50,000	April - September 2002
Support for ePortal	\$100,000	October 1, 2002 - September 30, 2003
enDx Total Cost to Date	\$500,000	
enSearch Online Costs to Date	\$50,000	Estimated

5.1.3.2 Functionality

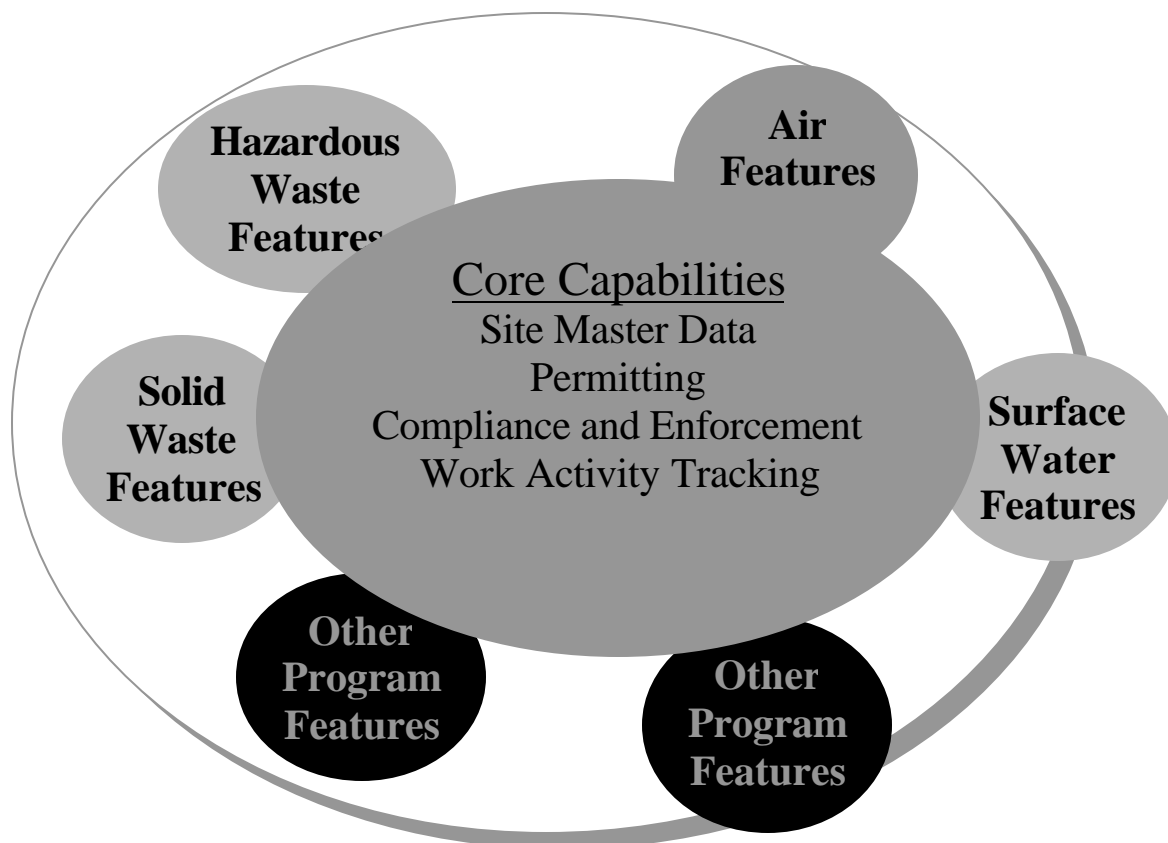
Exhibit 5-2 depicts an overview of enSite. enSite's core capabilities include site master file, permitting, compliance and enforcement, and work activity tracking. Specific program features for air, surface water, solid waste, hazardous waste, and other features are integrated within each capability. Core and air functionality are fully operational.

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Exhibit 5-2 enSite Conceptual Design



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enSite allows a user to develop folders and files, communicate with other users via ticklers (similar to instant messaging), and attach “sticky” notes to a folder. There is a “help doctor” that provides help topics and tips to a user for accomplishing tasks.

Letter Builder uses MS Word to generate letters. It contains many templates and provides a user the flexibility to modify or add specific language to a template.

Key to the implementation and use of enSite was EPD’s development of an Administrative Manual with policies and procedures for implementing the “one-stop permitting” process and using enSite and the development processes for hearing and addressing user concerns and implementation issues. A standing EPD user group charged with providing a forum for users concerns was developed and continues in place. The user group interfaces with the technical staff and management on any issue associated with the successful implementation of enSite from burden reduction, requests for enhancements to request for policy changes. In addition, there are enSite coordination groups that deal with issues that cross divisions. A senior management policy group meets regularly to address emerging issues and to facilitate implementation of new functionality. Finally, EPD conducts weekly open issue training sessions to help staff with users’ issues one on one or on a small group basis.

MDEQ participates in the AMS’ TEMPO Users Group. As a member of the TEMPO Users Group, MDEQ works with other members to leverage knowledge and data regarding system enhancements and other key lessons learned. Other members of the TEMPO Users Group are New Jersey, New Mexico, Kentucky, and Tennessee.

MDEQ provides training and outreach to industry and public groups by attending manufacturers association, outreach sessions, and advisory councils. Topics include industry and public needs, system changes, and future enhancements.

Site Master File

The master file serves as a single repository for facility information across all media. The data provides the basis for electronic development of letters, administrative documents, public notices, etc. The master file consists of three major components, including general information, facility identification, and subject items. General information includes the names a facility has used over time, permit numbers and other identifiers associated with a facility (both current and historic), address and telephone number, name of facility representatives, telephone number of facility representatives, and owner name(s). Facility identification is a unique identifier that is automatically generated by the system. Subject items are the particular equipment, activities, or processes which are of interest to MDEQ. An MDEQ agency interest is most often a regulated entity. However, an MDEQ interest does not follow EPA’s definition of contiguous for a regulated unit.

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Instead, MDEQ's definition of a regulated unit (Agency Interest) is a person, place, or operation of interest to MDEQ. For complex sites, it is not necessary that the geographic footprint be one contiguous property. The agency interest may not be contiguous if there are two separate physical locations that are under common control and are regulated by a single regulatory instrument.

Permitting

Permitting begins with receipt of the application and includes processing, reviewing for completeness and technical accuracy, and drafting, modifying, renewing, and issuing of permits. An applicant submits a hard copy, CD, or diskette of the application to MDEQ. MDEQ utilizes a dedicated single administrative person to receive and process the application. The administrative person processes the application as follows:

- First, he or she checks the master file to determine if the facility is already in the system. If a facility is in the system, the administrative person updates the master file with the new information from the application. If the application is from a new applicant, the administrative person will create a new record for the master file. Once the master file is created or updated, a security feature locks the file so that changes cannot be made.
- Second, he or she generates a letter using Letter Builder to acknowledge receipt of the application.
- Third, he or she refers the new application to the appropriate branch chief, who in turn assigns it to a permit writer.

When the permit writer receives the application, he or she will do the following:

- Enters data into the application screen. The application screen consists of drop down menus that guide the permit writer on the type of data to enter. Data checks are built into the process to assure that correct information is being entered. When the permit writer completes entering the data, the process validates the data and identifies inconsistencies or errors for the permit writer to reconcile.
- Reviews the application for completeness and technical accuracy. If the permit writer identifies a deficiency within the application, he or she will resolve it with the applicant.
- Issues a notice of deficiency letter using Letter Builder, if necessary.
- Updates the application screen, if necessary,
- Issues the applicant a notice of completeness letter using Letter Builder.

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- Builds the permit. The permit writer builds the permit by selecting permit conditions from the permit library based on the data entered into the application screen. When specific permit conditions are needed, the process provides the permit writer with the flexibility to develop specific language using MS Word. The process allows the permit writer to close the application screen at any time, store the information in a file, and lock the file so that the data is protected from being deleted or modified. The permit writer provides the facility with a draft permit for review.
- The permit writer is responsible for ensuring that the proper public notice procedures are followed. The placement of the public notice on the web is automatic once the permit writer has completed the necessary tasks within enSite. The engineer develops the newspaper or other public notice documents from enSite and sends them to an administrative person for handling and mailing.

Compliance and Enforcement

Compliance and enforcement capabilities include tracking, scheduling inspections, creating inspection checklists, and evaluating violations and enforcement actions. Once fully implemented, when a facility submits its monitoring data, the compliance system will check the data against the requirements in the permit to determine whether the data meets the permit requirements. If the monitoring data exceeds the permit requirements, the facility is in violation of its permit. Currently, MDEQ is determining what reports would be useful for tracking violations and releases.

Work Activity Tracking

The system uses a work activity log to assign staff responsibilities for drafting permits and public notices, status tracking, and performance measurement. Management receives reports from the work activity log for assessing EPD's overall productivity and efficiency of issuing permits.

5.1.3.3 Next Steps

Next steps for enSite include:

- Design water permitting module;
- Design water and waste compliance module;
- Broaden the scope of placing draft and final permits online;
- Develop an interface to EPA database to reduce duplicate data entry;
- Evaluate implementation of a fee system for applicants;
- Develop a GIS interface;
- Evaluate if and how to implement RADIUS; and
- Modify New Jersey-based modules for DMRs to use in MDEQ.

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5.1.4 Electronic Reporting

RADIUS

RADIUS, developed by AMS, is the software for allowing the regulated community to electronically submit permit applications and data that must be reported to MDEQ. EDP is not currently using RADIUS because it presents several challenges for implementation and use. A summary of the challenges is as follows:

- Is not user friendly resulting in a steep learning curve for users and a high level of support from MDEQ permitting staff;
- Requires industry to install software on their computer system that demands high levels of support from MDEQ information technology staff;
- Requires maintenance of reference table and new version releases placing high maintenance requirements on both MDEQ staff and users; and
- Is not currently web-enabled.

If MDEQ implements RADIUS, they will need to consider how the system will manage confidential business information (CBI), developing a written participation agreement between MDEQ and the regulated community, and establishing a MDEQ help desk for user support.

Electronic Environmental Data Exchange Application (enDx)

enDX is the State's e-government portal for allowing electronic submittal of notice of intents (NOI) for general permits (construction, storm water, baseline storm water, asphalt, and mining) and requests for updates to facility information. enDx uses DB2 as its database and is located on the State's e-portal server. The State plans to transfer the data to Oracle. (Refer to Section 5.1.10 for additional information on enDx.) MDEQ is also in the process of implementing electronic submittals for the annual "Inspection Report and Certification Form for Storm Water Pollution Prevention Plan Evaluation" that is required under the Baseline Storm Water General Permit.

RCRAInfo

Currently, MDEQ uses staff to collect, process, and submit the required data to EPA's RCRAInfo system. Recently, EPA awarded a challenge grant to MDEQ to develop data flows to support exchange of data between the State participants and EPA systems, RCRAInfo and National Emission Inventory System (NEI) via CDX. Because MDEQ, New Jersey Department of Environmental Protection, New Mexico Environment Department, Kentucky Department for Environmental Protection, and the Tennessee Department of Environment and Conservation are all implementing the same enterprise-wide integrated management system, TEMPO, they are jointly participating in the challenge grant. MDEQ is the lead state for the RCRAInfo data flow and New Mexico is the lead state for the NEI data flow. According to MDEQ, the benefits of this include:

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- Advancing the functionality of the network by creating high quality flows from state nodes to EPA databases via CDX, which have broad applicability by supporting five states;
- Providing EPA with quality data from states that have spent hundreds of thousands of hours cleaning historical data and putting data quality procedures in place to ensure on-going data quality is exchanged;
- Fostering collaboration of five states that have already demonstrated that they can work together in the past and all have existing immediate data exchange needs; and
- Demonstrating the ability to exchange data between EPA and states with very different base architectures.

5.1.5 User Application and Interface Programs

RADIUS

MDEQ has the technology through RADIUS to allow applicants the option of completing and submitting applications by paper, CD, diskette, or other electronic medium.

However, MDEQ is not using the technology because of several challenges discussed previously in 5.1.4.

enDx

MDEQ also has the technology through enDx to enable applicants the option of completing and submitting applications online. Currently, MDEQ is participating in a state-wide pilot of enDx to allow an applicant of construction storm water notice of intent (NOI) the ability to complete and submit an application on the internet.

If the applicant submits a NOI online, enDx generates a permit profile based on the NOI and creates a RADIUS import file for importing into enSite. enSite searches the database to determine if an MDEQ interest exists. If an MDEQ interest already exists, enSite pre-populates the information in the application. enDx requires an applicant to properly complete specific fields. If a specific field is not completed, enDx will not allow the applicant to continue until it is completed.

Results of the Pilot

MDEQ expects that the results from the pilot will include:

- Identification of more changes to the e-permitting process;
- Determining the level of training required of users; and
- Finalizing a help guide

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Next Steps

After completion of the pilot, plans for MDEQ include:

- Utilizing enDx for simple permitting activities, including baseline industrial storm water NOI, mining NOI, asphalt (multi-media, air, water) NOI, and updating facility information (e.g., transfer of ownership, data corrections) for one-stop permitting;
- Providing outreach activities for target audience; and
- Developing a universal form for collecting common information that is required on every type of application. The universal form would collect limited information from the applicant. An applicant would complete and submit the universal form electronically. The system would process the universal form in the same manner as the NOI.

5.1.6 File Format

MDEQ does not use a file format defining how the data is organized and transmitted from the regulated community to the state. Currently, applicants are submitting paper copies of applications for all media permits.

5.1.7 Transport Mechanism

enSite

enSite supports submittal of applications by paper or through RADIUS via any electronic medium. (Refer to Section 5.1.3 for additional description of enSite.)

RADIUS

MDEQ has the technology through RADIUS to allow applicants the option of completing and submitting applications by paper, CD, diskette, or other electronic medium. However, MDEQ is not using the technology because of several challenges discussed previously in Section 5.1.4.

enDx

MDEQ also has the technology through enDx to allow applicants the option of completing and submitting applications online. (Refer to 5.1.5 for an additional description of enDx.)

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5.1.8 Legal and Security Mechanism

On January 1, 2002, the State of Mississippi's Uniform Electronic Transactions Act (Act) became effective. The Act gives MDEQ the authority to accept and maintain electronic records and electronic signatures. (Refer to Section 5.1.3.1 for a description of security.)

5.1.9 Report Integrity

MDEQ is receiving electronic data for construction storm water NOIs through enDx. MDEQ has procedures in place to create a permanent record of the data. Once the data enters the database, it becomes a permanent record and cannot be altered. Only the database administrator has access to the database. Records are retained in the database for an indefinite period of time.

5.1.10 Electronic Signature and Certification

enDx, the State's e-portal system, accepts electronic signature. A first time user completes the certification online and mails or faxes a paper copy to MDEQ for processing. MDEQ processes the applicant's information and issues the applicant a certificate of coverage. The MS Uniform and Electronic Transactions Act provides the state the legal right to use and accept electronic signatures.

5.1.11 Information Collected

- Mississippi Department of Environmental Quality, Overview of Electronic Permitting
- Uniform Electronic Transactions Act, Section 75-12, July 1, 2001
- National Environmental Information Exchange Network Grant – Challenge Grant Application to develop data flows to support exchange of data between State Challenge Grant Participants and EPA systems RCRAInfo and NEIN via CDX
- Mississippi Department of Environmental Quality, Network Readiness Grant Application
- Mississippi Department of Environmental Quality, Draft Screen Shots for RCRA Part B Permit Application

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5.1.12 List of MDEQ Participants

Name	Affiliation	Telephone #	E-Mail Address
Tim Aultman	ECED	601.961.5653	Tim_Aultman@deq.state.ms.us
Jerry Cain	Chief of EPD	601.961.5073	Jerry_Cain@deq.state.ms.us
Bruce Ferguson	EPD	601.961-5141	Bruce_Ferguson@deq.state.ms.us
Melanie Morris	Chief of DID	601.961.5044	Melanie_Morris@deq.state.ms.us
Jim Tillman	EPD	601.961-5095	Jim_Tillman@deq.state.ms.us
Don Watts	ECED	601.961.5155	Don_Watts@deq.state.ms.us
Marc Wyatt	EPD	601.961-5367	Marc_Wyatt@deq.state.ms.us

5.2 New York State Department of Environmental Conservation (NYSDEC) E-Permitting Site Visit of September 17- 18, 2002

5.2.1 Background

Since the 1980s, the New York State Department of Environmental Conservation (NYSDEC) has developed, in stages, a centralized information management system for e-permitting. NYSDEC's ultimate goal is to design and operate an integrated application/permit/compliance/enforcement information system that is multi-media. A summary chronology follows:

- In the mid-80s, NYSDEC created the Regulatory Compliance Information System (RCIS), a mainframe system, to improve internal tracking of many NYSDEC permit applications in both its environmental quality and natural resource programs. This system was designed to ensure that NYSDEC was complying with the state Uniform Procedures Act, a statute to ensure an efficient means for managing all permits within one division, the Division of Environmental Permits. RCIS maintained information on the application being applied for, the location of the activity (i.e., facility), and the party legally responsible for the activity.
- In the mid-90s, NYSDEC created the Facility Information System (FIS) as an independent system which is integrated, as a module, into other systems. FIS serves as the hub for the information management systems as it maintains all the shared data about facilities and the legally responsible parties for all programs. Also in the mid-90's, NYSDEC upgraded RCIS (continuing it as a mainframe system) and renamed it the Department Application Review & Tracking (DART) System to maintain the common application data for all programs, and integrated it with FIS.

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- Beginning in 1992, NYSDEC created the Air Facility System (AFS) as a client-server system to provide for the review of new air program Title V and State Facility Permits. As part of AFS, NYSDEC pioneered the use of electronic submittal of applications. The system was created to reduce the amount of time to correct errors during the review of an application. Applicants were provided with a variety of methods for submitting applications. Once the application was loaded to the transaction database, applicants utilized a browser interface to view and correct application errors just as the NYSDEC staff would. Once all the errors were corrected, the application could be uploaded, printed, and signed by the facility applicant. Despite its positive features, the system had several drawbacks and it was not widely utilized by industry with about 100 users total. Since the system was not Y2K compliant, NYSDEC decided not to rewrite the function. The function was specifically designed for Title V permits and could not be extended to other programs.
- In 1997, NYSDEC created the State Pollutant Discharge Elimination System (SPDES) Information System (SIS) to provide on-line viewing of discharge monitoring report information by NYSDEC staff (both Central and Regional Offices) to replace the practice of printing out the PCS reports and sending them to NYSDEC staff.
- In 1998 – 2000, NYSDEC obtained and implemented an EPA One-Stop Program Grant to upgrade FIS, DART, and SIS for the following projects:
 - Integration of GIS into Line of Business Applications (i.e., Facility Mapping/MapObjects within FIS);
 - Creation of a Multi-Media Compliance and Enforcement System (i.e., enhancements to AFS and FIS);
 - Integration of permit data onto a common platform with related application systems (i.e., major upgrade to DART); and
 - Develop a Five Year Plan for integrating NYSDEC systems in accordance with the One-Stop Program goals.
- The Water Compliance System (WCS) was created to track inspection information. It became operational in 2001. It goes well beyond the functionality provided under EPA's PCS mainframe system.
- Since 2001, NYSDEC has been working on the DART Permit Module as a means for NYSDEC's various program staff to collaborate on preparing permits. This project includes:
 - A library of stored permit conditions, retrievable by permit type or activity type;
 - Electronic storage of the permit; and
 - Web-posting of the permit for access by the public.

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- NYSDEC has been encountering many challenges in the design, operation, and maintenance of an integrated data system, including lack of funding and management support. NYSDEC has relied on outside grants to fund system design and enhancements. NYSDEC utilizes its staff and consultants to design and enhance the integrated data system. Benefits of the integrated data system include:
 - Working closer with the regulated community and issuing more timely permits;
 - Providing “one-stop shopping” for all permits required for a project;
 - Improving compliance with environmental laws and rules; and
 - Providing the public with clearer and simpler NYSDEC regulations.

5.2.2 Relationship Between RCRA Program Implementation and Use of Electronic Permitting

New York State has adopted the federal program for RCRA and is a delegated state; however, NYSDEC uses its own New York State regulatory citations. At this point in time, NYSDEC has not made any decision concerning the adoption of EPA’s Standardized Permit Rule. At NYSDEC, the following activities apply to RCRA permits (as they do to all the State programs covered by the Uniform Procedures Act):

- Pre-Application Meeting - Staff in the Divisions of Solid & Hazardous Materials and Environmental Permits have a pre-application meeting with the applicant to discuss site selection and evaluation, and to establish application and regulatory requirements.
- NYSDEC provides online information to industry and the public via the Division of Environmental Permits website. The online information includes guidance forms, public notices, and permit status. NYSDEC is working on providing a public website to search for and summarize the status of the application with eventual links to actual issued permits.
- Expanded Public Participation – For new facilities, new units, or whenever a significant change is proposed, the applicant must hold at least one public meeting prior to submitting the application to NYSDEC; provide public notice 30 days prior to the meeting; and submit a meeting summary and list of attendees and written comments to NYSDEC.
- Receive Application - Submittal of an application to the NYSDEC regional permit administrator (RPA) in the Division of Environmental Permits officially starts the permitting process. The application is logged into DART. The environmental projects permit manager sends the application to the permit writer in the Division of Solid & Hazardous Materials and throughout the agency as

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required, if the applicant did not provide copies to them already. Sequential application processing and review activities include:

- Issuing the applicant a letter acknowledging receipt of application (generated from DART);
 - Reviewing the application for completeness and accuracy;
 - Resolving all application deficiencies (generating a Notice of Incomplete Application which can be generated from DART); and
 - Issuing the applicant a Notice of Complete Application (generated from DART).
-
- Draft Permit Preparation - The Division of Solid & Hazardous Materials permit writer conducts a site inspection before drafting the permit. The permit writer prepares a draft permit using the application and applicable regulations. When the draft permit is complete, it is sent to the facility for comments.
 - Public Notice Comment Period - NYSDEC invites the public to review and comment on the draft permit through the public notice. NYSDEC publishes the Notice of Complete Application and Draft Permit via the NYSDEC weekly website publication, the Environmental Notice Bulletin (ENB) (data downloaded from DART). NYSDEC requires the applicant to provide a local newspaper notice and radio announcement. All public comments received during the public notice period are evaluated. A public adjudicatory hearing may be scheduled with an administrative law judge to resolve disputed facts. The permit may be revised to reflect the comments received.
 - Permit Decision - NYSDEC's staff prepares the final permit based on all relevant information obtained during the permitting process. The RPA signs the permit, and the final permit is transmitted to the facility.
 - Modifications and Renewals - Permits modifications and renewals are processed as new applications, including updating the permit for any regulatory changes that occurred subsequent to the issuance of the original permit.

In working through the permitting process, RCRA permit writers in the Division of Solid & Hazardous Materials utilize the following approach:

- A model permit and permit writer's checklist using Microsoft Word and Corel WordPerfect;
- NYSDEC RCRA permit writers work very closely with the facility representatives when reviewing applications for completeness and technical accuracy. For instance, the permit writer may contact the facility representative on the telephone or via e-mail with questions about their application. As a result of telephone or e-mail discussion, the permit writer may edit the text of the application to make it more acceptable to the Department, especially when the Department is provided with an electronic copy. This reduces paper mailings and

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expedites processing of the application. The draft completed application can then be mailed/e-mailed back to the facility representative for review/consideration and subsequent resubmittal.

5.2.3 Overview of NYSDEC's Electronic Permitting System

NYSDEC has moved toward creating a multi-media integrated system through the use of FIS, DART, AFS, SIS, and WCS. The media specific systems, AFS, SIS and WCS, share related data with FIS and DART. The FIS and DART systems are integrated and can share data. As NYSDEC's systems are developing on individual schedules, not all systems have the same functionality at present. For instance, AFS is ahead in its application processing, permit creation, release reporting, compliance, enforcement and regulatory fee-billing functions. SIS and WCS are advanced in data analysis and compliance inspections.

5.2.3.1 System Architecture

Exhibit 5-4 presents an overview of the system. The system uses a Sybase database with PowerBuilder screens or ColdFusion web pages. Client devices use Windows Operating Systems. The Server Operating System is Solaris. The system is very flexible, making it easy to enhance or expand.

Data standards were created during data conversion and have been continuously refined as new functions were developed. The data standards include definition, length of field, data type for each data element, and create, delete and archive rules.

The systems are integrated and can share data. Ideally, NYSDEC acknowledged, with proper funding a system could be built to address all media offices and their special needs with permitting being an integral aspect. For example, an ideal development sequence would enable the building of facility identification (FIS), permits applications, permits, reporting, compliance, and billing. Due to funding constraints, however, these systems were built in stages based on available funds. First of these systems was the generic application tracking system, DART. This was followed by the air permits program, AFS, which became a priority based on exigent circumstances of Title V and as the result of available funding. Development of WCS and SIS tools for use by the water program followed. Of the media offices, the RCRA program has done the least e-permitting development to date, and is slated for more development after certain air and water tools have been completed. Currently, RCRA permits are drafted using word processing software (WordPerfect) utilizing boilerplate permit modules. The DART Permit system is not being utilized to build RCRA permits.

Security

Systems use a non-hierarchical security system based on User Id and password, which restricts access by function. Access to the database is only possible through the application (users do not have database rights). External access is controlled by our

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Checkpoint firewall. Servers are located in a secure computer room and the database and applications are backed up daily.

Cost Information

Exhibit 5-3 presents a summary of the cost for developing, operating, and maintaining the various components of the system.

Exhibit 5-3
Summary of Cost Information for FIS, DART AFS, WCS, and SIS

<i>Component</i>	<i>Cost Estimate</i>	<i>Sources of Funding</i>
FIS	200K	100K from One-Stop
DART (common platform upgrade)	300K	190K from One-Stop
AFS	9M	
WCS	200K cost of development	100K from federal government
SIS	150K to develop	50K from federal government

5.2.3.2 Functionality

Facility Information System (FIS)

FIS maintains all the data associated with a facility, including data about the legally responsible party. FIS has records for 100,000 facilities that do business with or are of some interest to NYSDEC. FIS contains many essential pieces of identifying and regulatory information. For instance, each facility is designated a NYSDEC identification (ID) number, which is generated by the system. Other data include:

- Location information;
- NYSDEC region;
- The name of the owners, type of parties and contacts;
- Cross-references to other ID numbers used in NYSDEC; and
- Summaries of permit issuance and expiration dates for all media permits (as maintained in DART).

For facility locations, coordinate locations can be obtained or relocated by use of an embedded MapObjects/GIS function. Much of the FIS data is downloaded to the Cornell University GIS repository site available over the web for use by the public. Staff report that the system works quite well. It was developed by contractors and NYSDEC staff, with contractors completing about 75% of the work but with staff and contractors doing roughly the same amount of work on enhancements.

Several steps are being taken when loading of data to FIS to ensure that data quality issues are being addressed. A summary of the steps follows:

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- There is a manual process to check for duplicates while data is loaded to FIS. NYSDEC considered purchasing software for this task, yet decided that software alone, however, cannot be used to solve this issue.
- NYSDEC staff checks data manually on a daily basis to ensure accuracy and uniqueness through various methods.
- NYSDEC conducts internal workgroup meetings every other month to ensure high quality data is entered into the system.
- NYSDEC staff can correct mistakes when they see them. There are several data standards built into the system, which require a party to enter specific information into the system. Failure to enter the information will trigger a reminder to the user that information is incomplete.

Department Application Review and Tracking (DART)

DART enables NYSDEC to track timelines and due dates for several milestone decisions in the course of an application review, including:

- Due dates for completeness of the application based on the permit type and activity proposed;
- End of the public written comment period on a complete application;
- Due date to decide whether a project requires a public hearing; and
- Due date for a final agency decision on the application.

DART is utilized for all major environmental quality and natural resource permits administered by NYSDEC, including RCRA. DART provides a number of reports for project managers and supervisors to manage their work, and a number of specific work products using data already entered into the system. DART reports include:

- Task Due Report for project managers to list projects due the current week;
- Application Status Reports for list of pending, incomplete, suspended, complete, and overdue applications;
- Geographic Log for lists of all facilities in a municipality; and
- Weekly Workload and Statistical Reports for supervisors to review overall workload in each regional office.

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DART produces the following notices for NYSDEC to send to applicants:

- Receipt of Application;
- Incomplete Application; and
- Complete Application.

DART also produces a notification to staff for internal review of the application. The system will download Notices of Complete Applications to the NYSDEC's ENB which is available on the NYSDEC website. NYSDEC provides extensive hands-on training to staff on use of the system and its new features. DART is accessed over a wide area network from all NYSDEC regional and sub-regional offices.

Air Facilities System

AFS contains detailed application data as received from an applicant. That data is used to write a permit, and the permit is used for compliance and fee-billing purposes. A summary of how AFS receives and builds a permit follows:

- The application is logged into DART for tracking due dates in application review. The detailed air application data is entered into AFS through the AppLoader module, a temporary database, either by diskette upload or through manual data entry.
- The permit writer in the Division of Air Resources reviews the application for completeness and accuracy and resolves application deficiencies with the applicant.
- Notices of Incomplete and Notices of Complete Application are prepared in DART and sent to the applicant.
- The permit writer uses the Permit Builder Module screens to build the permit. AFS has a permit conditions library for use in building the permits. AFS performs quality assurance checks to ensure all applicable regulations are cited and that all required conditions are included in the permit being drafted.
- AFS has error report tracking and help functions. In addition to the Permit Builder module, other modules and functions address emissions, monitoring, compliance, reporting, and fee billing.
- AFS data is shared with the FIS and DART systems.

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SPDES Information System (SIS)

Put into use in 1997, SIS has replaced the practice of printing out the PCS reports and sending it to regional compliance staff. Most water discharge monitoring reporting information involves data and charts used by field staff, as opposed to text. The system helps staff view the required discharge parameters versus the actual exceedences online. Since ease of use is important for field staff, color coding is used to indicate where a parameter is out of compliance (e.g., red text). The system provides details regarding a given parameter, such as sewerage. The system draws upon data available in FIS. Information can be located according to facility and permit. A one-hour training session was conducted across the state to explain how to use SIS.

The information is updated using the steps outlined below, which takes approximately 2-3 weeks:

- Review of data submitted;
- Manual data entry by key punch contractor;
- Upload of data to EPA's Permit Compliance System (PCS); and
- Download of information from PCS each week and upload to system

Water Compliance System (WCS)

WCS is a compliance and enforcement application used by NYSDEC staff for generating inspection checklists and maintaining inspection records. Future enhancements will provide for consent orders and permit limit violations. When an inspector completes an inspection, he or she enters the data into WCS. In the future, WCS will provide the inspector with the ability to export data to Microsoft Word for incorporation in letters to a facility. When WCS generates an inspection checklist, the checklist will include the results from a previous inspection.

Approximately 80 to 90 NYSDEC regional staff has access to WCS via the intranet. Since its inception in 2001, 3,000 new inspection records and 12,000 existing inspection records have been entered into WCS. Further development of WCS has ceased due to NYSDEC not receiving an EPA grant. To inform staff how to use WCS, helpful tips were distributed. Only limited historical data was loaded into WCS. Regions still use paper files for prior inspection information.

Web Access

Since 1999, NYSDEC has provided public access concerning permitting information through its website (www.dec.state.ny.us). The site provides an array of information, including:

- Downloadable PDF versions of draft and final Title V air permits;
- Regulations and guidance for a wide range of NYSDEC programs;

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- Public notices; and
- Downloadable forms for applying for selected NYSDEC permits.

5.2.3.3 Next Steps

NYSDEC is continuously taking steps to improve the systems. A summary of current enhancements that are underway is presented below.

DART

- NYSDEC is currently involved in a major enhancement to DART for actual permit development. DART Permit will provide a library of conditions to be utilized by the various permit type programs. This system will allow creation of general permits and standard activity permits to lessen the workload of starting each permit from scratch. Staff will be able to easily access a history of permits at any facility to assist in compliance and enforcement. Permits will be posted on the web for access by the public. DART Permit will encourage more enforceable permits and more consistent permits across the state.
- DART and DART Permit will integrate with other media-specific data systems (e.g., AFS, SIS, WCS) which have more detailed information needed for each NYSDEC program.
- DART data will become accessible over the web in the future. This will enable the system to address environmental justice and public participation issues.

FIS

NYSDEC is currently embarking on a project to eliminate those facilities from prior system data merges which do not have any specific and relevant information and have gone unused for some period of time; however, this would require dedicated funding and staff serving a function with Department-wide benefits.

Web Access

Public interest groups want to be notified sooner than required about a facility's plans to submit an application for a permit. To address this access and timing issue, plans are being finalized to use funds from the state environmental justice policy to make data from the DART system more available to the public.

General Needs

Although several enhancements are underway, NYSDEC has a list of needed improvements to all systems that "go wanting" due to lack of funding and/or staff. The enhancements include:

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- For all application/permit systems, speed of transmission is an issue. NYSDEC's post-9/11 network improvements are providing redundancy and alternate means to connect to data systems.
- Having a dedicated data quality review function in the system;
- Having a better data quality control process in place for FIS;
- Providing for consent orders and permit limit violations in WCS;
- Providing the inspector with the ability to export data to Microsoft Word for incorporation in letters to a facility for WCS; and
- Incorporating previous inspection data into WCS so that an inspector can include the data in the current checklist.

5.2.4 Electronic Reporting

RCRAInfo

NYSDEC routinely collects and submits the required data to EPA's RCRAInfo system.

5.2.5 User Application and Interface Programs

NYSDEC is not utilizing electronic submittal of applications by the internet, distributed software programs, or by other applications. A web-based system, as discussed in 5.2.1, for applicant correction of air Title V applications was previously available, but has been discontinued. Therefore, the user and application interface programs are not applicable.

5.2.6 File Format

NYSDEC does not use a file format defining how the data is organized and transmitted from the regulated community to the state. Currently, applicants are submitting paper copies, and in some cases diskettes or CDs of applications for all media permits.

5.2.7 Transport Mechanism

Applications are submitted principally by paper, and in some cases via e-mail, or on CD, or diskette. While NYSDEC attempted to use a web-based system for correcting applications with AFS, the system is no longer in use. (See background section 5.2.1 for details.)

5.2.8 Legal and Security Mechanism

(See 5.2.10, below)

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5.2.9 Report Integrity

With the exception of application via E-mail, diskette or CD, NYSDEC is not providing for electronic submittal of applications by the internet, distributed software programs, or by commercial packages. In cases, where a permit writer adds language to an application, the permit writer provides the applicant with a copy for review and final signature certification. A review and final signature certification of the application creates a permanent record of data for future use for analysis or in court.

5.2.10 Electronic Signature and Certification

New York has a law for electronic signature and the Office of the Controller is accepting electronic signatures through the State's e-portal. However, NYSDEC has not received the framework and support from the Governor's Office of Technology for electronic signature.

5.2.11 Information Collected

- New York Department of Environmental Conservation Division of Solid & Hazardous Materials, Part 373 Permit Module I – General Provisions,
- New York Department of Environmental Conservation Division of Solid & Hazardous Materials, Part 373 Permit Module III – Storage in Containers
- New York Department of Environmental Conservation Division of Solid & Hazardous Materials, Part 373 Permit Module IV – Storage/Treatment in Tank Systems
- New York Department of Environmental Conservation Division of Solid & Hazardous Materials, 6NYCRR Part 373 Permit Application Technical Completeness Checklist for Hazardous Waste Tank/Container/Containment Building/Miscellaneous Unit Storage/Treatment Facilities
- Bureau of Hazardous Waste Management, EPA Data Management and Reporting Systems

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5.2.12 List of NYSDEC Participants

<i>Name</i>	<i>Organization/Title</i>	<i>Email Address</i>	<i>Telephone #</i>
Bill Adriance	Environmental Permits, Chief Permit Administrator	wradriance@gw.dec.state.ny.us	518.402.9178
Eric K. Blackwell	Solid & Hazardous Materials, Environmental Engineer	ekblackw@gw.dec.state.ny.us	518.402.8622
Tom Christoffel	Div of Air Resources	trchrist@gw.dec.state.ny.us	518.402.8403
Stuart Fox	Environmental Permits, Deputy Chief Permit Administrator	smfox@gw.dec.state.ny.us	518.402.9157
Chuck Haugh	Div of Water (SPDES)	cshaugh@gw.dec.state.ny.us	518.402.8154
Mark Hyland	Information Technology	mehyland@gw.dec.state.ny.us	518.402.9922

5.3 Texas Commission of Environmental Quality (TCEQ) E-Permitting Site Visit of October 16-17, 2002

5.3.1 Background

In 1998 when TCEQ was created by the legislature, from parts of three previously separate agencies, the TCEQ inherited several data systems. Although the data systems were incompatible, TCEQ decided to use them and modify them over time. TCEQ prepared a strategic plan on the information management system. The strategic plan included a centralized data base for facility information, consolidating compliance and enforcement data, and an emphasis on obtaining environmental conditions and environmental loading data.

During the 1990s, there were two separate change management efforts within TCEQ. The first effort was a business process review of agency functions. Results included consolidating permitting functions for an environmental media under one division. The other change management effort was the development of the Information Strategic Plan described in the previous paragraph.

Today, the strategic plan is moving forward with consolidation of facility and contact data and with consolidation of compliance and enforcement data. Consolidation of data on environmental conditions and environmental loading is proceeding more slowly.

The Air Permits Division (APD) operates an e-permitting process that is quite sophisticated compared to the other program areas within the agency. Air Permits has the ability to accept application data in a variety of formats, both electronic and hard copy, and then convert this data into a format such that it may be loaded directly to the Title V Information Management System (IMS) developed to support implementation of the Federal Operating Permits Program within the State of Texas. The Title V IMS is somewhat unique in that it is not only used for storage of application and permit data but also incorporates tools to facilitate application review and permit development.

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The creation and administration of this process involved input from and coordination between many program areas including New Source Review (NSR), Enforcement, Engineering Services group, Legal, Emissions Inventory and Field Operations.

The APD also formed a Title V advisory group consisting of industry representatives who worked collaboratively with APD staff to develop electronic forms. Emphasis was placed on the development of an e-permitting system, for which the criteria for the functionality and accessibility was established. Industry representatives defined development objectives for TCEQ forms. The objectives were: 1) to provide functional forms for the user; 2) integrate data from a database with the forms; and 3) provide the ability to send data electronically.

After the development of the forms, for three months, APD staff and focus group members tested the operation and functionality of the forms.

Upper management supports the creation of a RCRA e-permitting system, but requires the Industrial Hazardous Waste Division (IHW) to use only existing TCEQ software and no additional staff. As a first step in developing a strategy for a RCRA e-permitting system, the IHW staff researched the feasibility of using the agency's existing software for system development. This included a review of Adobe Acrobat, Microsoft Word, and Cold Fusion linked with an Oracle database. Their finding for each of these software applications is summarized below.

- WordPerfect- This program is the TCEQ standard and all downloadable information is in this format. The advantages to using this software include that with limited staff one can create forms/tables that are easy to manipulate, create hyperlinks, and submit data using CD Rom. The major disadvantage is that most facilities do not use it.
- Microsoft Word- While this package has many positive features similar to Word Perfect, because it is not the agency standard, they must get agency approval to use this for development.
- Adobe Acrobat- The Reader version is free and it can perform field validation and calculations. A large drawback is that the fields for information entry are limited.
- Cold Fusion- This package is highly interactive and well-suited for electronic submittal. In addition, because it can be housed on an agency server, it can be used by outside customers free of charge. A major disadvantage is the cost of building and maintaining a system, which includes significant staff time.

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5.3.2 Relationship Between RCRA Program Implementation and Use of Electronic Permitting

TCEQ has adopted the federal program for RCRA. However, TCEQ is not planning to adopt the Standardized Permit Rule when it is final.

A summary of TCEQ's activities for RCRA permits follows:

- **Pre-Application Meeting** - TCEQ encourages applicants to hold a pre-application meeting with the public to provide an opportunity for both the applicant and the public to identify and discuss potential issues. Applicants are also encouraged to hold a pre-application meeting with TCEQ and notify TCEQ of the intent to file a permit.
- **Receive Application** - TCEQ encourages applicants to submit an electronic copy of the application either on CD or diskette. Receipt of an application officially starts the permitting process. Activities include:
 - Issuing the applicant a letter acknowledging receipt of application;
 - Notification of the public via newspaper public notice and TCEQ's website of all applications received by TCEQ on a monthly basis;
 - Reviewing the application for completeness and accuracy;
 - Resolving all application deficiencies; and
 - Issuing the applicant a Notice of Completeness letter.
- **Draft Permit Preparation** - The draft permit is prepared based on the application and applicable regulations. The permit writer uses a model permit with standard permit condition language to draft the permit. TCEQ allows an applicant to receive up to two Notice of Deficiencies (NOD) indicating corrections and clarifications that need to be made. If the NODs are not addressed, TCEQ issues the permit according to conditions it deems necessary. When the draft permit is complete, it is sent to the facility for comment.
- **Public Notice Comment Period** - TCEQ invites the public to review and comment on the draft permit through the public notice. TCEQ publishes a public notice in local and statewide newspapers and on TCEQ's website. All public comments received during the public notice period are evaluated.
- **Permit Decision** - TCEQ prepares the final permit based on all relevant information obtained during the permitting process. The Division Chief signs the permit and the final permit is transmitted to the facility.

Texas requires a facility to submit a complete application for renewals and modifications. This requirement ensures the public has all the data needed to participate in the permitting process.

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Section 5.3.3 includes a description of data management systems that support the RCRA program. TECQ has plans to develop an e-permitting system for RCRA. (See section 5.3.3.4 for a discussion of next steps.)

5.3.3 Overview of an Electronic Permitting System

Following is a description of each system's architecture and functionality.

5.3.3.1 System Architecture

Exhibit 5-4 provides an overview of the Central Registry integration with the various environmental databases and applications. The Central Registry is populated through migration of data from legacy systems, such as Title V. Central Registry is a master facility file and contains very little permitting information. There are currently no plans to turn Central Registry into a permitting system. It is for core facility as well as owner and operator data. The media-specific systems comprise the spokes of the system and provide information to the Central Registry. Exhibit 5-4 summarizes the software for the databases and applications.

Exhibit 5-4
Summary of Description and Software for Databases and Applications

Database/Application	Description	Software
Central Registry	Central location of core facility, owner and operator data	Advantage:GEN, Oracle, ColdFusion, Crystal Reports
Title V Information Management System (IMS)	Fully integrated e-permitting process for Title V	Oracle, Visual Basic, Advantage:GEN, Crystal Reports, WordPerfect
State of Texas Environmental Electronic Reporting System (STEERS)	TCEQ's Electronic reporting system	Oracle, ColdFusion Advantage:GEN
TRACS	A data management system for industrial and solid waste	Ingres
Paradox	Tracking system for industrial and solid waste permits	Corel Paradox
Waste Water Consolidation (WWC)	Will contain all environmental information except air	Oracle, Visual Basic, Advantage:GEN
Comprehensive Compliance and Enforcement Data System (CCEDS)	A database of compliance and enforcement information that links to the Central Registry	Advantage:GEN, Oracle, Crystal Reports

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Waste-Water Consolidation (WWC)

WWC is an Oracle database that was designed by program staff and information technology (IT) staff to contain all environmental information except air. The IT staff has migrated and/or plan to migrate data from TRACS and Paradox-based permitting databases to WWC.

Title V Information Management System (IMS)

The IMS application currently uses Windows 95 Clients to access the application. In the near future, these clients will be converted to Windows 2000. The Title V IMS resides on a UNIX server utilizing the HP-UX 11 operating system, and is written with an I-CASE tool call Advantage:GEN. The database resides on a UNIX server, also with HP-UX 11 operating system, and utilizes Oracle 8i. File and print servers are networked with Novell Netware, version 3.31.01 on Windows 95, version 4.81 and 4.83 on NT and Windows 2000, and servers are on version 5.

The APD staff worked collaboratively with Title V applicants in developing the Air Permits Division (APD) electronic Portable Document Format (PDF) fill-in forms using Adobe Acrobat. The ADP PDF fill-in forms are accessible from the TCEQ website. The Adobe Acrobat Reader can be downloaded from the Adobe Web site for free, therefore, the applicant can utilize the electronic forms with no additional costs. The Adobe Reader offers a universal platform with the capability of integrating with Netscape Navigator and Microsoft Internet Explorer.

Security is implemented at various levels. The first level of security for the database utilizes user ID and password, and policies and procedures. Only the database administrator (DBA) has direct access to the Oracle database. The DBA issues an ID and password to a TCEQ user. Access to files, directories, and data tables are controlled based on the level of access assigned to the individual user. Individual rights include read, write, execute, and delete.

The second level of security is the database security application. Create, Update, Read, and Delete access is provided based on the default project role assigned to each user by the database security administrators. Access can be granted on a window or individual window component basis.

The third layer of security is implemented through database code and serves to compliment the database security application. For example, based on a users role in the security application, he/she may have access to create data in a specific window interface. The third layer of security is such that the user must be assigned to the project before the access to create data is enabled.

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Comprehensive Compliance and Enforcement Data System (CCEDS)

CCEDS is a database of compliance and enforcement information that links to the Central Registry. CCEDS tracks violations and generates inspection checklists. Inspectors enter data from inspections into CCEDS. TCEQ is developing an algorithm to calculate a compliance rating for each company. The compliance ratings will be posted on the TCEQ website. Some migration of data from the RCRA Paradox system to CCEDS is still needed. While the system can be used internally, in the future the public will have access to parts of it.

State of Texas Environmental Electronic Reporting System (STEERS)

STEERS uses four environments in its operating system. ColdFusion servers run on Windows 2000 for development, testing, and production. Oracle servers run on UNIX. Developers work on PCs with Windows 95, 2000, or NT. Customers who access STEERS through the Internet using a Web browser may use a variety of operating systems which include Windows 3.1, Windows 95, Windows 98, Windows 2000, Windows NT, Windows ME, Windows XP, UNIX, or MacIntosh. After a user submits its data to STEERS, the data feeds into a temporary database where it is converted and uploaded to the appropriate database.

Security for STEERS includes the following:

- Application Level Security - Customers must authenticate themselves with an acceptable account and password to enter the STEERS application. There are three roles within the STEERS application assigned to all accounts. Customers may have read, edit, or submit roles. All agency staff with STEERS accounts can use the read function. Staff does not have privileges to modify data or submit data for customers. A role is assigned to the account based on what role was requested on the SPA.
- Physical Security - The servers are physically located in a locked room on the agency campus with restricted access. Only a few information resources operations and system administration staff have access to the server room.
- Software Security - (Refer to 5.3.8 for details.)

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Cost Information.

Exhibit 5-5 presents a summary of the cost for developing, operating, and maintaining the various databases and applications.

Exhibit 5-5 Summary of Cost Information for Development of Databases and Applications

<i>Component</i>	<i>Cost Estimate</i>
Central Registry	\$5.6M
Title VIMS	\$5M*
STEERS	Under \$200K
WWC	\$4.5M
WAM	\$17M
WUD	
CCEDS	\$6M

* Design and development costs

5.3.3.2 Functionality

Central Registry

TCEQ requires that a Core Data form be submitted on all incoming registrations unless a regulated entity and customer reference number has been issued and no core data has been changed. The Core Data form serves as a single form for all media and is the first place where data is entered into the Central Registry. Electronic submittal of the Core Data form is only available for Title V applicants.

Title V Information Management System (IMS)

Air Permits can accept application data in a variety of formats, both electronic and hard copy, and then convert this data into a format such that it may be loaded directly to the Title V Information Management System (IMS). The Title V IMS is somewhat unique in that it is not only used for storage of application, permit data, and reports required by Title V, but also incorporates tools to facilitate application review and permit development.

The Title V IMS process provides applicants options for completing and submitting applications. The options include the following:

- Completing PDF fill-in (web-based) forms online and submitting electronically;
- Downloading the PDF fill-in forms, saving the forms on a PC for completion at a later time, and submitting electronically; and
- Submitting the application by paper copy, CD, or diskette.

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The Title V IMS provides functional APD PDF fill-in forms for the user. The APD website provides guidance and interactive links to the fill-in forms for a user to complete. The APD PDF fill-in forms provide the user with the following functionalities:

- Provide a single document format on the TCEQ APD website with the ability for users with any type of system to access and utilize;
- Enable users to easily navigate through the form;
- Display a clear, legible, easily viewed replication of the information that was originally on paper;
- Provide the ability to print an exact replication of the form, serving as a substitute for paper copies;
- Allow users to save a form and its data to a local hard drive and edit for further submissions;
- Provide the ability for users to send data from their local database to the form;
- Have the ability for users to easily submit a form and its data electronically to TCEQ; and
- Provide the ability to take the form's data after submitting to TCEQ and populate it to the TCEQ database.

When a user inserts data directly into the forms, it automatically verifies, reformats, and calculates data as it is filled in, reducing data entry errors. The user can interface the forms to his/her database system enabling population of data into the forms.

When an applicant submits the form, the system processes the form as follows:

- The applicant, utilizing their Web browser, completes the PDF form on-line, then clicks on a "submit" button on the bottom of the form, which initiates a Java script written in the form. This Java script parses the data, and submits it to a Perl script in a location on the Agency Web server outside of the fire wall.
- The Perl script takes the data and reformats it into an ASCII text file format. The Perl scripts then assigns a time-stamp as a unique file name and also uses it as a confirmation number for the applicant.
- The Perl script returns a message to the applicant from their browser, giving the applicant the unique confirmation number and message regarding their submittal, along with a copy of all the data they submitted. This message can be saved on the applicant's PC.
- Prior to the form data file being transferred to a local server, a virus check is performed on the incoming data file.

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- The data file is then opened in WordPerfect and clean-up macros are run to eliminate any stray codes, and the data is placed in a format for loading into the IMS.
- When the form data is free from errors, the data is loaded into the Oracle IMS database.

To date, 1,106 applications were loaded electronically. APD has saved TCEQ 9,345.7 man hours or 56 FTEs for a month, or 1.7 FTEs for a period of 2.5 years. In dollars, the savings to TCEQ is approximately \$90,776.

If an applicant submits a paper copy application, APD will scan the application, run clean-up macros on the data and then directly load the data into the IMS system, thus eliminating any data entry errors.

A data consistency feature of the database ensures that quality data is provided and identifies data deficiencies.

The Title V IMS incorporates tools to support application review and permit development. One of the projects in the APD was the flowcharting of state and federal rules. This effort aided in categorizing individual rule requirements (standards, monitoring, testing, record keeping, and reporting) and served as a tool for applicants to determine requirements based on specific sets of operating conditions for an individual unit. The Title V database incorporates the logic of the developed spreadsheets such that for each set of operating parameters submitted by the applicant the database will automatically identify the corresponding set of requirements based on agency determinations. The database also contains a feature such that determinations made and submitted by applicants in the application and agency determinations can be compared and discrepancies identified. Once discrepancies have been resolved, data is copied to the permit area of the database. A similar set of logic exist to determine both general and special terms and conditions to be contained within the permit.

Once the permit has been developed within the database, the data is read and extracted using Crystal Reports. A macro is initiated on the extracted information in order to place the data in the correct permit format.

Crystal Reports is also used to read and extract data for incorporation into letters sent to applicants as well as public notice packages.

STEERS

STEERS assists customers in meeting certain reporting requirements and aids the TCEQ in collecting and processing the data. STEERS enables customers to submit industrial and hazardous waste reports, including annual waste summaries and monthly waste receipt summaries. It also allows the addition of new waste codes and new waste

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management units to the notice of registration (NOR) as well as changes to facility information, waste information, and management unit information. Currently, only industrial and hazardous waste receivers and large quantity generators are required to use STEERS to provide monthly and annual waste summary reports. STEERS is intended to be used by authorized employees or representatives of the companies that use STEERS to report environmental data. Because this data is reported to comply with environmental regulations, the one who submits STEERS data to TCEQ must have the appropriate authority in the particular environmental program.

A “STEERS User’s Manual” for the desktop is available for download or a customer can order a hard copy. Both versions of the STEERS software have a detailed help system. Clicking the help button will bring up a menu of help topics. The STEERS-Help Listserv is an e-mail posting list created for STEERS users to share comments and information. Members of this list can send in comments, questions, and problems they have encountered with the STEERS software. STEERS staff will collect questions, and summarize and post them to the entire group on a periodic basis. Also, fixes and tips will be included where possible. TCEQ also has support staff available to assist customers over the phone or through e-mail. TCEQ provides training for customers and TCEQ staff who use STEERS.

Paradox

A Paradox application assists IHW staff with permit tracking. The system contains both facility information and permit information. Regarding facility information, data fields exist for company name, location, and EPA I.D. number. It also contains the following pieces of permitting information: permit number, status, issuance and expiration date; responsible staff; permit actions, including the agency’s status in processing the permit by different branches and allowing for detailed report generation; authorized activities under the permit, such as storage and post-closure care; unit information; additional location data; fee information; correspondence; and contact information.

Microsoft Project

This software package helps the IHW program track progress on a particular project by person. The Microsoft Project number is noted in the Paradox program. Microsoft Project and Paradox do not communicate with each other.

TRACS

TRACS stores the most comprehensive information at TCEQ on industrial and solid waste and includes the following:

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- Notice of registration (NOR) information such as solid waste registration number, EPA ID, date of initial registration, hazardous waste permit number, industrial permit number, municipal solid waste number, amendments to NOR registration status, company name, site name, and site location;
- Facility mailing address;
- Physical location information, including county code, latitude and longitude, site location, site address, including company name and address, and site access description;
- Hazardous solid waste facility contact information;
- Facility business description, including NAICS and SIC codes, and historic descriptions;
- Facility other activities, i.e., hazardous waste fuel activities, waste handler status, hazardous used oil activities;
- Owner information, including name of current owner and historic information;
- Operator identification of contact(s);
- Generator information, including type of generator, HW generator status, generator history, classes of solid waste;
- Waste information, including notification date of status, waste stream status, “waste converted from” description, class of solid waste generated, and generator’s description of waste;
- Units by waste stream; and
- Waste management unit, including unit description, unit status, date of last status change, unit regulatory status, biennial system regulatory status, classes of waste managed in unit, and capacity.

Data is manually entered into TRACS by Permits Administrative Review staff and other permits division staff in waste and water.

According to IHW staff, the data within TRACS is 60% confident. The data within TRACS is used by the IHW division to write permits. TRACS is difficult to query. There is data overlap between Paradox and TRACS, however, they do not communicate with each other.

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WWC

WWC has replaced a number of Paradox applications for program areas including IHW Permits, IHW Corrective Action, and MSW Permits. Future plans include tighter integration with Agency Central Registry and inclusion of data from TRACS. Enhancements to WWC are currently underway to streamline data entry and maintenance for WWC users.

5.3.3.3 Next Steps

RCRA

The IHW division is in the early planning stages to develop a RCRA e-permitting system, using the Title V IMS as a model. Specifically, the goal would be the creation of a system that performs the following functions:

- Provides an applicant with the option of creating a web-based application;
- Runs data quality and completeness checks on the application;
- Completes a checklist for permit writers to ensure completeness;
- Provides a system application for the permit writer to build the permit; and
- Imports information required to complete a modification.

Regarding the building of the permit, information submitted in Part A of the application will, depending on the answers provided, bring up information in Part B. For instance, the type of facility (e.g., commercial or non-commercial) and type of units (e.g., containers) will trigger additional questions in Part B based on this information.

Title V IMS

The APD currently accepts drawings and maps on disc, or sent as an e-mail attachment, as long as the format meets the Agency software standards. New Source Review (NSR) applicants will have the opportunity to submit similar documents electronically after the release of electronic NSR applications in 2003. In addition, the Agency is continuing efforts to incorporate electronic signatures.

CCEDS

Develop an application in CCEDS so that customers can submit air emissions data electronically.

STEERS

Develop an online STEERS Participation Agreement with electronic signature.

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5.3.4 Electronic Reporting

STEERS

The electronic reporting system for TCEQ is STEERS. STEERS allows a single user from the regulated community to sign-on for reporting of multiple facilities and media. (Refer to Section 5.3.3 for a description of STEERS.) STEERS requires users to accept an electronic signature. (Refer to Section 5.3.8 for details on electronic signature.)

Any application that requires an electronic signature must use the STEERS system. The agency will not be building multiple architectures for accepting electronic signatures.

5.3.5 User Application and Interface Programs

STEERS

The user can submit the STEERS application through an Internet connection using a web browser or download the software and load it on a PC. TCEQ development standards require compliance with Internet Explorer 4.0, Netscape 4.0, or high versions. TCEQ prefers that the browser be XML 1.0 compliant. A benefit of using the web-based application is it is easier to make changes to the application, as opposed to having to send thousands of disks to customers for desktop installation. However, there can be web browser issues because Netscape is not XML compliant.

Title V IMS

Title V IMS provides applicants options for completing and submitting applications. The options are the following:

- Completing PDF fill-in forms (web-based forms) online and submitting electronically;
- Downloading WordPerfect versions or the PDF fill-in forms, saving the forms on a PC for completion at a later time, and submitting electronically (Note: the applicant must have the full Adobe Acrobat program in order to save the form in PDF); and
- Submitting the application by paper copy, CD, or diskette.

Data quality checks are built directly into the form. As an applicant enters data into the form, the data is automatically verified, reformatted, and calculated. If an applicant submits a paper copy application, APD will scan the application, then load the form data is converted into a format that can be directly loaded into the IMS system, thus eliminating any data entry errors. (Refer to Section 5.3.3 for a description of the Title V E-permitting system.) Benefits of the PDF fill-in forms include:

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- Easy to use, thus reducing the need for training;
- The user-interface will exactly resemble the paper forms;
- The forms can be accessed from virtually anywhere in the world, at any time, and the user can be sure that he/she is accessing the latest version of the form; and
- Reducing data entry errors.

5.3.6 File Format

Title V IMS

The Title V e-permitting system allows the applicant to submit data in various formats, such as WordPerfect, Word, ASCII, PDF, EXCEL, QuattroPro, or Paradox on a CD, diskette, or via e-mail.

STEERS

STEERS uses an XML format to define how the data is organized when it is transmitted from the regulated community to TCEQ.

5.3.7 Transport Mechanism

STEERS

STEERS offers two transport mechanisms to customers, including an Internet connection utilizing a browser or downloading the software and loading it onto a PC.

Title V IMS

Title V IMS provides applicants options for completing and submitting applications. The options are the following:

- Completing PDF fill-in forms (web-based forms) online and submitting electronically;
- Downloading the PDF fill-in forms, saving the forms on a PC for completion at a later time, and submitting electronically;
- Submitting the application by paper copy, CD, or diskette; and
- Forms can be attached to an e-mail

5.3.8 Legal and Security Mechanism

STEERS

STEERS has legal and security mechanisms in place to ensure that TCEQ is collecting credible data and providing the means to maintain the enforceability of the regulatory

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program at the same level as paper-based systems. Legal and security mechanisms include:

- Participation Agreement and account/password creation;
- Single user sign-on; and
- Verification of Participation Agreement compliance with previous recent logons.

Before one can use STEERS, a user must complete a STEERS Participation Agreement (SPA); hence, this is the protocol used by TCEQ to accept an electronic signature. The SPA establishes a legally binding signature for all reports submitted electronically under the account given to that individual. It replaces the signature that is required on each paper report.

In 2001, the State enacted the Texas Uniform Electronic Transactions Act (UETA) to help establish a legal framework for the growing use of Internet transactions between state and local government and citizens.

Title V IMS

(Refer to section 5.3.3.2 for a discussion on security.)

5.3.9 Report Integrity

STEERS

STEERS maintains report integrity through the following steps:

- The customer enters the data directly into STEERS, thereby eliminating data entry errors by TCEQ staff.
- Data must meet several validation standards before it can be accepted by STEERS. Validation standards are specific to each environmental program and include verifying the data is accurate. However, accuracy depends on the data entry from the customer.
- After entering the data, if the customer elects to submit the data, he/she must demonstrate his/her intent and authorization by entering his/her password as a signature and then press the submit button. Then the application displays confirmation of the data submission including the confirmation number and hash code.
- Every electronic submittal results in an XML copy of record (COR). The COR contains the data, identifying tags, who submitted the data, the IP address from where it was submitted, and the confirmation number and hash code generated from the submitted data.

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STEERS has four audit functions described further below.

- Activity Log documents the title of every page a customer goes to, including their active ID and user account, and inserts it into a database.
- Upload Log creates a log of the data when a customer uploads data in batches instead of manually entering the data on the data entry screen.
- Submit Log records type of data, time, and other information every time a customer submits data to STEERS.
- History Log documents any changes made to data that has already been submitted to the TCEQ. It includes the table name, field name, old data value, new data value, and the customer account.

Currently, the State's library only accepts two media for archiving, paper and microfiche. Electronic media on CD may be stored for a maximum of five years, then the CD will automatically be returned to the staff that originally archived it and they will have to resubmit it. However, there are plans to transfer the XML files from their electronic format to microfiche, but this procedure is currently not in place.

Title V IMS

The Title V IMS maintains report integrity through the following steps:

- The applicant enters the data directly into the PDF fill-in forms or a paper copy is scanned by APD staff directly into the system, thus eliminating data entry errors.
- As an applicant enters data into the PDF form, data validation is achieved by adding drop-down menus, check boxes, and other data restraints to the PDF form. The applicant is forced to choose only an acceptable answer. Additional constraints can be added to the forms to accept either numeric or character data-sets in a field, or data in a particular format, such as "01/03/03" and not "01-03-03."
- When the form is submitted, clean-up macros can be run on the form in the following formats: WordPerfect, Paradox, ASCII text, or MS Word. The other submittal option is through a hard copy that was scanned, to eliminate any extra codes, and to reformat the data so it can be loaded to the IMS database.

The Title V audit function logs each change to data as the change is made. The Audit log notes the user initiating the change, the date the change was made, the data that was entered, and the project in which the change was initiated.

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5.3.10 Electronic Signature and Certification

To maintain integrity of an electronic signature during transmission, every time a customer logs on to STEERS, the date and time of the most recent logons are displayed. The customer must declare that all of those logons were his/hers or admit that they were not all his/hers. If a logon was not conducted by the customer whose signature is on file, the account is disabled and the customer must contact the STEERS help line. (Refer to Section 5.3.8 for a description of the SPA and the legal framework for electronic signatures.)

5.3.11 Information Collected

- Electronic Permitting Powerpoint Presentation, Texas Natural Resource Conservation Commission (TNRCC), Industrial Hazardous Waste Permits Section, October 2002
- Diagram of Central Registry Integration
- Screen Shot of Regulated Entity Detail from the Central Registry, October 2002
- Overview of Data Migration for Central Registry
- TCEQ Forms Development Objectives, Air Permits Division
- TCEQ Instructions for Form OP-UA62, Description and Data Pertaining to All Emission Points, Glycol Dehydration Unit Attributes
- Forms and Instructions for FCAA Title V Operating Permits Program, TCEQ Air Permits Division Intranet Website
- TCEQ Core Data Form from Central Registry
- PDF Conversion Process/Forms Interaction Process, Air Permits Division
- Participation Agreement with Instructions for the State of Texas Environmental Electronic Reporting System (STEERS)
- Screen Shot of STEERS Homepage, Internet Version 2.0, October 2002
- Screen Shot of STEERS Facility Information, October 2002
- Screen Shot of STEERS Pick Facility, October 2002
- Screen Shot of STEERS Edit Facility Information, October 2002
- Screen Shot of STEERS View Pending Changes for Facility Information, October 2002
- Screen Shot of STEERS View Facility Information with Submitted Changes, October 2002
- Screen Shot of STEERS Confirm Record to Send to TNRCC, October 2002
- Screen Shot of Industrial Hazardous Waste (IHW) Permits Pending Applications Query, October 2002
- Screen Shot from Corel Paradox of Facility Information for IHW Permits Data, October 2002
- Screen Shot from Corel Paradox for Review Notice of Registration, October 2002
- Screen Shot from WWC of Required Activity and Feature Maintenance, October 2002
- Table 1, Definitions of Location Window Fields for WWC

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- Table 2, Definitions of Address Window Fields for WWC
- Table 3, Definitions of Client Window Fields for WWC
- Table 4, Definitions of Contact Window Fields for WWC
- Table 5, Definitions of Electronic Communications Window Fields for WWC
- Definitions of WWC Tracking/Workflow Application Window Fields
- Instructions and Procedural Information for Filing a Part A Application for a Hazardous Waste Storage, Processing, or Disposal Facility, TNRCC
- Part B Permit Application for Industrial and Hazardous Waste Storage/Processing/Disposal Facility, TNRCC
- Industrial & Hazardous Waste Permit Application Review Process Diagram, TNRCC
- Status of Electronic Permitting, IHW Permits Division, October 2002
- Concept for a RCRA E-Permitting System, IHW Permits Division, October 2002
- Special Project: Streamlining Permitting Process, IHW Permits Division
- STEERS Security and Infrastructure, October 31, 2002

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5.3.12 List of TCEQ Participants

Name	Title/Org	Telephone #	Email
Greg Nudd	Manager, Information Strategic Planning	512.239.1247	gnudd@tceq.state.tx.us
Richard Carmichael	TCEQ Permits	512.239.6629	rcarmichtceq.state.tx.us
Mike Leckie	IT Section, OPRR	512.239.2273	mleckie@tceq.state.tx.us
Jason Haas	IHW Section, ELD	512.239.2497	jhaas@tceq.state.tx.us
Tooran Khosh	IHW Section, Permits	512.239.2580	tkhosh@tceq.state.tx.us
Clarissa Bennett	Data Mgment, OPRR/Air Permits Division	512.239.2215	cbennett@tceq.state.tx.us
Minor Hibbs	Str. Env Analysis	512.288.4299	mhibbs@tceq.state.tx.us
Katherine Nelson	IHW Permits	512.239.6622	knelson@tceq.state.tx.us
Wade Wheatley	Waste Permits	512.239.5252	wheatle@tceq.state.tx.us
Roger Dockery	IHW Permits	512.239.2568	rdockery@tceq.state.tx.us
Gary Trim	Waste Permits Div	512.239.6708	gtrim@tceq.state.tx.us
Jessica Ogle	STEERS Project, Mgr Opr	512.239.6849	joggle@tceq.state.tx.us
David Uechi	IT Mgr, OPRR	512.239.1812	duechi@tceq.state.tx.us
Terry Salem	Staff Attorney	512.239.0469	tsalem@tceq.state.tx.us

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APPENDIX A

Definitions of Criteria from Interview Guide

Relationship Between RCRA Program Implementation and Use of Electronic Permitting. The RCRA program uses an electronic permitting system or is in the process of planning or designing such a system.

Overview of an Electronic Permitting System. The Electronic Permitting System has a defined purpose, scope, goals, and objectives.

Electronic Reporting. The Electronic Reporting System transfers environmental data from the regulated community to the state and consists of four components. The components are: user and application interface programs; file format; transport mechanism; and legal and security mechanism.

User and Application Interface Programs. The regulated community and the state have interface programs that communicate effectively. The user and application interface translates data from the regulated company's system into a specific format and translates data from format into the state system, respectively. The user and application interface programs include:

- Web forms are an internet application providing users with a template to enable industry to input data defined by the agency (e.g., smart forms)
- Distributed software programs are developed by a state agency and distributed to the regulatory community on diskettes or CDs
- Regulated community-developed applications
- Commercial packages purchased by regulated community

File Format. The system uses a file format that defines how the data is organized and when it is transmitted from the regulated community to the state.

Transport Mechanism. The system uses a transport mechanism that is reliable and secure. The type of transport mechanism significantly influences the type of legal and security mechanism required to maintain enforceability. Types of transport mechanisms include:

- Dedicated lines or dial-up connections
- The internet
- File transfer protocol
- Sending a CD-ROM, diskette, or other physical media through the mail

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Legal and Security Mechanism. There are legal and security mechanisms in place to ensure that the state is collecting credible data and provide the means to maintain the enforceability of the regulatory program at the same level as paper-based systems. Legal and security mechanisms include:

- Personal identification numbers (PINs) and passwords
- Digital signatures and encryption
- Message encryption
- Mailed certification statements
- Transmission logs
- Functional acknowledgements
- Echo-back procedures

Report Integrity. There is a mechanism in place to assure that the data has not been altered from the time it was certified by the facility through receipt by the regulatory agency. There are procedures in place that assure the data transmitted by the facility is the data received by the state. The state has procedures in place to create a permanent record of the data for future use for analysis or in court.

Electronic Signature and Certification. The state has protocol in place to accept an electronic signature that is similar to accepting a hand-written signature. A signed electronic record demonstrates the identity of the individual signing the record and is linked to a respective electronic record.

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APPENDIX B

ACRONYM GLOSSARY

General

ASTSWMO - Association of State and Territorial Solid Waste Management Officials

DBA – Database Administrator

ECOS – Environmental Council of the States

EPA – Environmental Protection Agency

NGO – Non-Governmental Organization

OEI – U.S. EPA’s Office of Environmental Information

PIN – Personal Identification Number

RCRA – Resource Conservation and Recovery Act

Mississippi

AMS – American Management Systems

CBI – Confidential Business Information

CDX – Central Data Exchange

DMR – Discharge Monitoring Reports

ECED – Environmental Compliance and Enforcement Division

enDx – Electronic Environmental Data Exchange Application

enSearch – *electronic* Environmental Search tool Online

enSite – *electronic* Environmental Information Management System

EPD – Environmental Permits Division

FIS – Facility Information System

HSWA - Hazardous and Solid Waste Amendments

MDEQ – Mississippi Department of Environmental Quality

NOI – Notice of Intent

NPDES - National Pollutant Discharge Elimination System

New York

AFS – Air Facility System

DART - Department Application Review and Tracking

NYSDEC – New York State Department of Environmental Conservation

ENB – Environmental Notice Bulletin

FIS – Facility Information System

GIS – Geographic Information System

ID - Identification

NYSDEC – New York Department of Environmental Conservation

PCS - Permit Compliance System

RCIS – Regulatory Compliance Information System

RPA - Regional Permit Administrator

SIS – SPDES Information System

SPDES – State Pollutant Discharge Elimination System

WCS – Water Compliance System

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Texas

APD – Air Permits Division

CCEDS – Comprehensive Compliance and Enforcement Data System

FTE – Full Time Equivalent

IHW – Industrial Hazardous Waste

IMS – Information Management System

IR – Information Resources

NOD – Notice of Deficiencies

NOR – Notice of Registration

NSR – New Source Review

PDF – Portable Document Format

SPA – STEERS Participation Agreement

STEERS – State of Texas Environmental Electronic Reporting System

TCEQ – Texas Commission of Environmental Quality

TNRCC – Texas Natural Resource Conservation Commission

WWC - Waste-Water Consolidation

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APPENDIX C

Information Sources Used to Prepare This Document

A State Guide for Electronic Reporting of Environmental Data, State Electronic Commerce/Electronic Data Interchange Steering Committee, 1999.

National Environmental Information Exchange Network, Information Package, Environmental Protection Agency, Environmental Council of States, June 2001.

Establishment of Electronic Reporting: Electronic Records; Proposed Rule, Environmental Protection Agency, Federal Register: August 31, 2001 (Volume 66, Number 1/0), [Page 46161-46195].

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System Design and Development Guidance, EPA Directive 2182.

RCRA Electronic Permitting Initiative, Panel Discussion at the 2002 RCRA National Meeting, January 16, 2002.

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Interview with Charles Freeman, Environmental Protection Agency, Office of Environmental Information, May 6, 2002.

Conference Call with John McQuade, Environmental Protection Agency, Research Triangle Park, May 6, 2002.

Interview with John Chelen, President, Hampshire Research, May 6, 2002

Pre-Meeting Interviews via Conference Calls with various State Representatives, June 12 - July 23, 2002.

Meeting Summary from the July 25th, 2002 E-Permitting State/EPA Stakeholder Meeting, Marasco Newton Group, Arlington, VA, July 30, 2002.